

WRANGELL-ST. ELIAS NATIONAL PARK AND PRESERVE

CENTRAL ALASKA NETWORK

Vegetation Monitoring Program

Summary Trip Report: Trail Creek Mini-grid

1 July – 10 July, 2009



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PURPOSE:

The purpose of this trip was to establish and measure a set of 25 permanent plots for long term vegetation monitoring at the Trail Creek mini-grid according to the Central Alaska Network (CAKN) vegetation monitoring protocols (see Roland *et al.* 2005). Twenty-three of the twenty-five points were sampled. Point 20 was not sampled due to insufficient time and point 7 was not sampled because it fell in the middle of a lake.

PERSONNEL:

Fleur Nicklen - crew leader, vascular composition, plot/quadrat variable estimates, transects

Dave Kofranek - non-vascular collections/id, soils data

Brandon Gottung – plot photos, tree and sapling data, tree cores, transect data

ACCESS TO MINI-GRID AND CAMPING POSSIBILITIES:

Trail Creek crosses the Nabesna Rd at mile 29.8. The mini-grid is located about 6km up the creek from the road. We had one person on a side-by-side ORV with a large trailer take all of our gear to the edge of the mini-grid. Because side-by-side ATVs are more stable than regular ATVs, I would highly recommend using a side-by-side in the future. The trailer we used worked really wonderfully (Figure 1). It is possible to hike into this mini-grid, but you would need at least three strong people helping and two people to hike in a resupply of food midway through the trip. This is likely not a possibility given the lack of available backcountry rangers in the Nabesna District. Just east of point 1 the creek becomes a little channelized and there are large boulders that prevented us from crossing with the ATV. When the creek is lower, this crossing would be possible. The trail that parallels the creek here is eroding and too risky to take with a trailer and all our gear. For this reason, we stopped just east of point one. Brandon, Dave and I shuttled our gear across the creek and upstream several hundred meters to a spot where the creek widened and there was good camping (Figure 2). Camping between points 11 and 12 would have saved a little hiking time, but this was a good spot with good water and OK visibility.



Figure 1. Ryan from maintenance/trail crew transporting all of our gear with a side-by-side ORV and trailer.



Figure 2. Our camp along the west bank of Trail Creek between points 1 and 6.

HIKING:

The hiking at Trail Creek mini-grid is fairly easy with the exception of a few steep climbs. There are very few trees, which makes for easier walking and clearer lines of sight for navigation. I would recommend getting an early start for points 25, 24, and 23 and completing them in one day to minimize the climbing. Trail Creek was fairly high when we first arrived at the mini-grid and was still quite crossable. The creek dropped throughout our 10 days and we used the creek as an access corridor to the eastern points. The mini-grid is moderately brushy, but the brush is usually below shoulder or waist height and pretty easy to deal with.

WEATHER AND ENVIRONMENTAL CONDITIONS:

We had excellent weather for the majority of the trip. The first several days were pleasantly cool in the morning and warm towards midday with some thundershowers or hail in the afternoon. Several times we had temperatures into the mid-80s F followed by hail. By July 5th fairly heavy smoke had obscured our view. We experienced hot (60s to 90s) and smoky weather for the rest of the trip. When we first arrived there was still a considerable snow cover from the snow event that occurred on June 26th on the south side of the mountains upstream of our mini-grid, but the south side was snow free by the end of our trip. The stream level dropped and was nonexistent at the road crossing when we left on July 10th.

SAFETY CONSIDERATIONS:

There were several safety concerns for us at Trail Creek. Northwest of point 19, in some thick brush, we ran into a moose or caribou carcass that still smelled and had some meat left on it. We also saw a good amount of bear evidence along the creek (prints and dug up *Hedysarum alpinum*). After our trip, a ranger was charged by a grizzly in the Trail Creek area (there was no

harm to animal or human in that incident), so bears are a concern here and something to be noisy about. Getting to point 23 and walking around this plot is steep and a little rocky; we needed to take care not to slip. Point 22 is quite bouldery, but it is not too difficult to get around. A personal safety concern for me at this mini-grid was asthma.

PHENOLOGY OBSERVATIONS:

The Trail Creek mini-grid is dominated by low shrub (dwarf birch-willow) and a few tundra plots on the northern row where the elevation rises above 4500ft. Plots 23 and 22 are the most interesting. Plot 23 is a dry graminoid/*Dryas* tundra plot and plot 22 is at the top of a hill created by old fallen boulders. The mini-grid is predominately south-facing (which is likely one reason it is as brushy as it is) and is a good candidate for a first mini-grid of the season. The phenology in early July was at its peak. Most vascular plants were in full flower or starting to set seed. Ericaceous species were on the tail end of flowering and starting to set fruit. *Asteraceae* species were in full to late flower. *Claytonia*, *Parnasia* spp, *Saxifraga* spp, and *Polygonum* spp. were flowering. *Parrya nudicaulis* was beginning to set seed.

GENERAL NOTES ON PLOT-WORK AND PLOT OBSERVATIONS:

I collected 86 vascular plant specimens from the Trail Creek mini-grid and Dave collected 133 nonvascular plants (Table 1). The number of the first photo taken at Trail Creek is 100-0324 and the last is 100-0737. Dave collected soil from all sampled points. A lack of soil at points 2 and 22 prevented him from collecting soil at all four locations. There were no trees and only 4 saplings to measure in all the plots we sampled. In the meta-plot, Brandon cored two trees, one from plot 3 and one from plot 4.

Wildlife: We saw lots of caribou scat throughout this mini-grid and very little hare scat. One morning a porcupine was leisurely munching on some willow between our tents and cook area. Also between our tents and cook area was a spotted sandpiper that did a spectacular job of distracting us morning and evening from seeing its little flock of offspring. On the brushy slope above the creek and below the tundra were groups of willow ptarmigan and some upland sandpipers. The sound of white-crowned sparrows was ubiquitous throughout the mini-grid.

Table 1. Collection series for the Trail Creek mini-grid.

Collector	Identifier	Series
Nicklen	Vascular plants	EFN-09-059 to EFN-09-144
Gottung	Photos	1000324 to 1000737
Kofranek	Nonvascular collections	4607 to 4739

ACTIVITIES:

Wednesday, July 1

At 8am Ryan from maintenance pulled into the headquarters parking lot at Copper Center with a trailer pulling the side-by-side ORV and ATV trailer (Figure 3). We loaded up the truck with our gear and headed off towards Slana. We made a brief stop in Gulkana to drop off our backcountry itinerary with dispatch. At the Slana Ranger Station we got directions to Trail

Creek and some coffee. We ate lunch at the Trail Creek road crossing and then loaded up the ORV and trailer and took off up the creek. The creek was fairly high from all the rain and snow we had in the past two weeks, which made the numerous stream crossings a little stressful (Figure 1). Ryan was tempted to leave us at the first established campground, but we were still a mile from the mini-grid and I was hoping to get to the spot on the creek between points 11 and 12, so we pushed on. It had started to rain pretty hard and the creek became a little channelized around point 1. There were some boulders that prevented us from crossing the stream in high water. A trail went up and around this section of the creek, but it was eroding and slanting towards the creek—it would be too dangerous to try to drive this with a trailer. We let Ryan use the satellite phone to call his boss to explain why he would be late getting back. It was about 3:30pm when Ryan got turned around and drove off. Dave, Brandon and I shuttled our gear across the creek and upstream until we found an open area along the creek between plots 1 and 6 (Figure 2 and 11). We were finished shuttling gear and setting up camp at 6:30pm.

Weather: It was partly cloudy in the morning with sun, clouds and showers in the afternoon.



Figure 3. Truck with the side-by-side ORV and trailer at the Trail Creek road crossing.

Thursday, July 2

On Wednesday morning we set off for plot 25. It was about a 1.5 hour hike. On the way we saw lemmings, willow ptarmigan with chicks, and upland sandpipers. We also saw a moose or caribou kill northwest of point 19. Point 25 is in a protected, moist spot that has fairly low diversity for a tundra plot at 1473m (4833 ft), 37 vascular species (Figure 4). It took about 3 hours to sample. After lunch we headed to plot 24, which is a south-facing and somewhat brushy plot for this elevation. It is dominated by *Betula nana*, *Vaccinium uliginosum*, *Salix reticulata*, *Salix glauca*, and *Festuca altaica*. I found 48 vascular species here. This plot took just over 3 hours to sample. We considered sampling 23, but because it was almost 6pm we decided to go back to camp. Point 23 is very species diverse and steep and would be difficult to do late in the day.



Figure 4. View of Mt. Sanford from plot 25 of Trail Creek mini-grid.

Weather: It was mostly clear all day. The temperatures were in the upper 40s early in the morning and rose to the mid-sixties F by the afternoon. We had some thunder in the afternoon and evening, but no precipitation.

Friday, July 3

On Friday we sampled plots 21, 16, and 11. It took about 1 hour to walk from camp to point 21. We hiked up the creek and then cut east to 21, which is a thick willow plot. After lunch as a little hail storm passed over us, we walked to point 16. Point 16 is less brushy and less diverse, but it still took us 3 hours to sample. At quarter to 5 we hiked down to plot 11, which is an open graminoid plot with a little seepy area. It has a good amount of *Equisetum* sp., *Tofieldia pusilla*, and *Salix reticulata*. We finished sampling at 7:15pm and were at camp by 7:40pm.

Weather: Sunny in the morning with clouds gathering by mid-day. At lunch we had hail and rain, but by mid-afternoon it was sunny and in the low 80s. It was partly cloudy and cooler in the evening.

Saturday, July 4

On Saturday, we completed points 10, 5, and 4. At 8:30 we started hiking towards point 10 and arrived around 9:30. Point 10 is a mixed shrub tussock tundra plot (Figure 5). After lunch we had a quick walk down to point 5, which was also somewhat boggy, but with taller shrubs and more *Salix glauca*. Point 4 was on the edge of a little valley and somewhat protected. This plot has relatively larger white spruce in the metaplot allowing Brandon to get a core here. It is also lichen rich, which made sampling slower. Back at camp, we celebrated the 4th of July with a camp fire.



Figure 5. Looking east from the center of plot 10.

Weather: Sunny and warm in the morning some brief showers in the afternoon. Smoke starting to obscure the mountains in the distance in the evening.

Sunday, July 5

Sunday we sampled points 22 and 17. We took the creek north until we were just east of point 22 and cut up the hill towards this plot. Plot 22 lands on a boulder field that seems to be formed from boulders falling off of the mountain (Figure 6). If you are standing on the boulders and looking north, the stream is to your right and to your left is a moist little valley/meadow surrounded by boulders and the mountain. It is an odd spot; the valley almost looks like a small stadium with boulder-bleachers all around (Figure 6). We saw and heard many pika at this plot. We enjoyed running the transect and setting up the quadrats here (Figure 7). It is a very lichen and moss rich plot and took an astounding 6 hours. At 3:20pm we headed to point 17, which has thick *Betula nana* and is on the edge of a slope above the creek. Since it was after 6pm when we finished point, we decided not to do point 12. Brandon and I headed back to camp and Dave went back to point 22 for some more botanizing.



Figure 6. Looking NW to plot 22.



Figure 7. Holding quadrat frame while sampling quadrat D at plot 22 of Trail Creek.

Weather: Sunny, warm and quite smoky. Not a drop of rain all day.

Monday, July 6

We sampled points 15, 14, and 9 ON Monday. It was very smoky when we emerged from our tents. After calling in for the morning, confirming our ATV pickup on July 10, we headed to plot 15. It was a fairly brushy plot with dense dwarf birch and willow. We ate lunch at 12:30 and then walked east to plot 14, which was an open, graminoid-herbaceous plot. At 4pm we headed south and uphill to plot 9. This plot is located on the SW side of a 4200 ft outlying hill. Because of the aspect, this is a brushy plot as well. We finished sampling at 6:45pm and were back to camp by 7:30pm. On our way back to camp, between points 9 and 8 we found a little pile of trash: a sealed bottle of water and some faded raisin and candy wrappers. It seemed too far off the creek to be left by hikers. Maybe snow-machiners dropped it the past winter?

Brandon realized early in the day that he had forgotten to take a picture of quadrats B and D at plot 17 the previous day. Once we got back to camp, he headed to plot 17 with the tapes and quadrat frame to get these photos. He said he could tell where we had placed the tapes and quadrat, but it is possible these photos do not show exactly how we had the plot set up when we were actually sampling.

Weather: Hazy sunny through the smoke with temperatures in the 70s to 80s.

Tuesday, July 7

On Tuesday we sampled points 12, 13, and 8. During our morning check-in we received the first inkling our helicopter flight would not be going as planned for the next mini-grid. Someone in Fairbanks had changed their flight plan, so ours would have to be pushed back a day. Of course, in the end it would be fires that changed all our plans. In any case, we hiked to point 12, which was an open dwarf-birch/willow plot. We ate lunch at noon and headed to plot 13, which is a pleasant dry sedge-willow meadow (Figure 8). Next we walked south to sample point 8. Plot 8 is a brushy dwarf birch-willow plot. To end the day we walked east to check out plot 7 and confirm that it is indeed in the middle of a lake. There were small fish jumping in the lake.



Figure 8. Plot 13 at the Trail Creek mini-grid (sedge-willow tundra).

Weather: Smoky, but otherwise clear and warm with temperatures in the mid 70s.

Wednesday, July 8

On this day, we completed points 19, 23, and 18. Rather than walk straight up to our highest point, 23, I chose to break the hike up by sampling 19 first and then 23. This worked quite well. Plot 19 is has patchy willow with areas of thick moss under the willows and open areas of sedge tundra. We ate lunch at 12:30 and then hiked up to plot 23. I found the most vascular plants at plot 23 (53 species). It is a steep, dry, south-facing plot with a mix of *Dryas*, *Kobresia* and *Festuca* (Figure 9). I collected quite a bit at this plot and it took me a long time. Even though we were tired, we hiked down to plot 18 and sampled it quickly. Plot 18 was mostly thick *Betula nana* and *B. occidentalis* and not very species-rich.



Figure 9. Plot 23 of the Trail Creek mini-grid. You can see the upper section of Trail Creek in the lower right of the photo.

Weather: Smoky but sunny and hot. The white-socks were intense at plot 19. Temperatures were in the mid 80s.

Thursday, July 9

Thursday we sampled plots 3, 2, and 1. All three of these points have fairly low diversity with 32, 28, and 22 vascular plants found at each plot, respectively. Point 3 is a somewhat sheltered plot between some low hills. It is brushy with some moist areas. On our way to point 2 the WD-40 went off in Brandon's backpack and saturated the bottom of the pack, the first aid kit and even soaked through to Brandon's shirt and pants. It was messy and stinky. Next we sampled point 2, which is one of the few north-facing plots in this mini-grid. The plot is located on a slope above a pond. After this we sampled point 1. It was only 6pm when we finished this plot and we considered doing a 4th plot, so that we didn't have to sample on our last day, but because a thunderstorm was approaching and Brandon's pack needed washing, we headed back to camp.

Weather: One of our few cloudy days. By early evening the winds had really picked up and heavy showers surrounded us, but never really hit us until we dove into the safety of our tents. It cleared up for dinner! It was still quite smoky.

Friday, July 10

We headed upstream 200 meters at 7:30am to sample point 6. This plot is located on an active floodplain and is dominated by willow (*S. alaxensis*) and some alder and young poplar. I was surprised not to find any *Dryas drummondii* here even though it was all around our camp. This plot took less than 3 hours and we quickly headed back to camp. I pressed the plants I collected from point 6 and we all packed up our gear and shuttled it downstream and across the creek to

where we had been dropped off. At 1pm on the dot Ryan showed up in the side-by-side and we loaded it up and took off down the trail. All went smoothly until the drive back to Copper Center when the truck kept overheating and we had to pull over and wait for it to cool down. We made it back to our cabanas in the gravel pit (seasonal housing for WRST) by 6pm.



Figure 10. Plot 6 of Trail Creek mini-grid is on a stream a stream terrace east of Trail Creek.

Weather: Sunny and warm, but still smoky.

CONCLUSIONS AND FUTURE CONSIDERATIONS:

In the future it might be better to try to camp between points 11 and 12, but the camping spot we had between 1 and 6 was quite good. Taking one side-by-side ORV is probably the most efficient way to access this mini-grid. If future crews sample plots 25, 24, and 23 in one day or sample plot 22 more quickly, it is entirely possible to completely sample this mini-grid. The plant communities within this mini-grid do not vary greatly from plot to plot. Points 23 and 22 are the most interesting points for vascular and nonvascular plants respectively.

REFERENCES CITED:

Roland, C.A., Oakley, K., Debevec, E. & Loomis, P. (2005) Monitoring vegetation structure and composition at multiple spatial scales in the Central Alaska Network. National Park Service, Central Alaska Network, Final Monitoring Protocol.

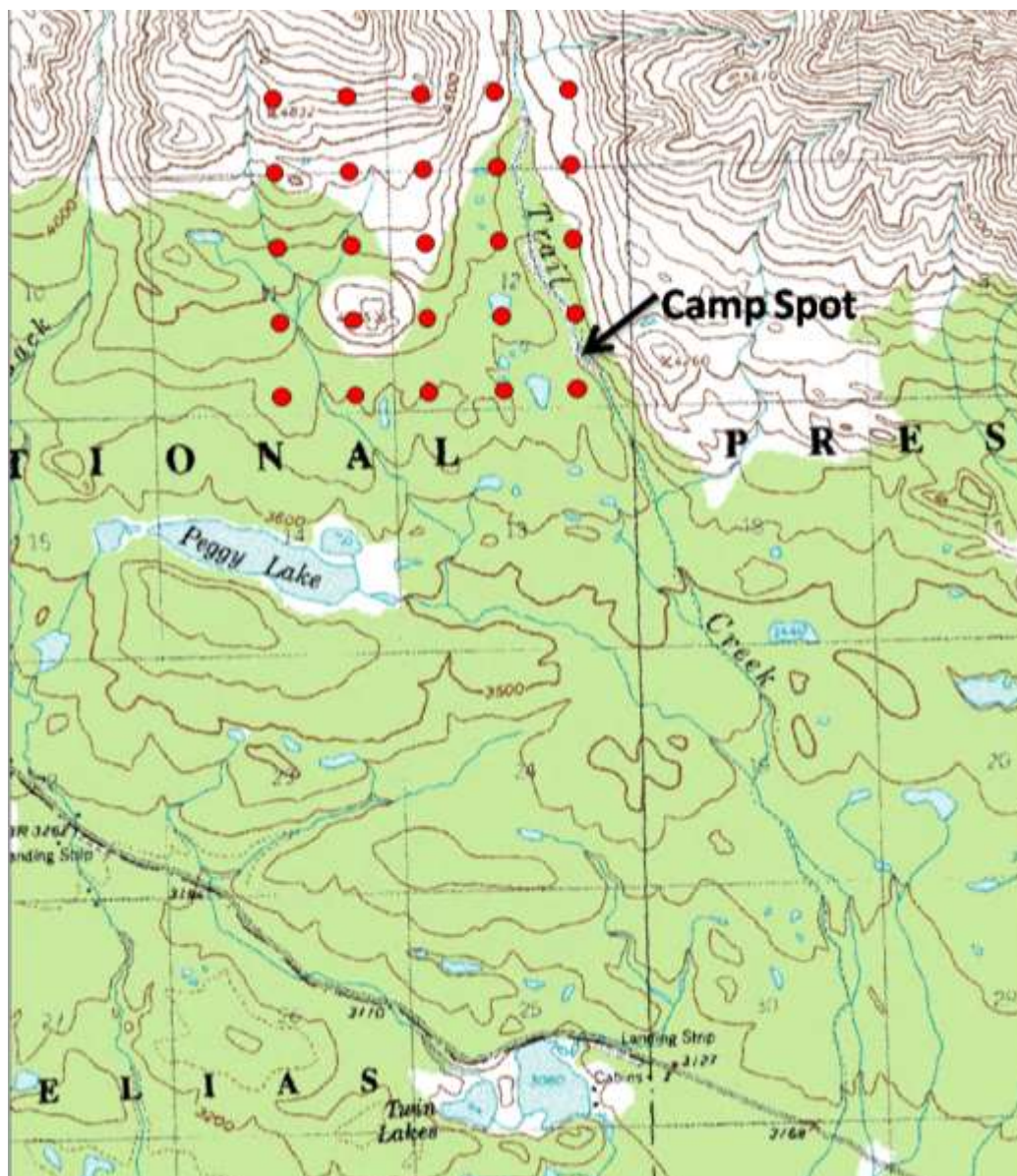


Figure 11. Map of the Trail Creek mini-grid showing the access route and camp spot.